

Beaver Habitat Restoration

Beaver were historically abundant on the Malheur National Forest, and their dams had a strong influence on the vegetative productivity of riparian corridors. In the 1800s and 1900s, Beaver trapping was pervasive through the Middle Fork John Day Subbasin. The resulting loss of these furry “watershed technicians” caused channel incision and left a narrow strip of alder-dominated riparian vegetation. As a result, water is quickly flushed through watersheds like Camp Creek, surrounding meadows dry out faster, and fish habitat becomes inadequate.



Photos: Reference landscape, Camp Creek, (Top) July, 2016, with single channel and alder-dominated vegetation. (Bottom) March, 2017. Camp Creek making use of entire floodplain during high spring flows. This dispersed energy and helped store water.

Beavers Assist Restoration Goals



In the 1970s, Camp Creek’s banks were severely degraded. The Forest Service began restoration efforts in the 1980s by installing log weirs. Although these were successful in restoring bankside vegetation, they presented a hindrance to juvenile fish passage and were later replaced with large woody debris that mimics natural tree fall, with the unexpected benefit of providing an attractive anchor for a beaver family’s new dam.



By 2016, beaver activity along Camp Creek included several new beaver dams, accelerating restoration of this stream by increasing channel complexity, floodplain reconnection, and juvenile fish survival rates.



Beaver Dam Analogues (BDAs)

Beaver dam analogues (BDA) offer another way to add large woody debris and complexity, mimicking beaver dams and raising the water table upstream of the structure.



Beaver dam analogues installed in Camp Creek in 2016 are backing up water and creating deep pools, promoting channel complexity, dissipating high flows, trapping fine sediment, raising water table, and storing water across floodplain for summertime use and expanded riparian vegetation growth.



Purpose and Need:

The purpose of the Aquatic Restoration Project is to maintain or enhance watershed health, species recovery, and diversity on the Malheur National Forest. The 2014 Aquatic Restoration Decision authorized 17 categories of aquatic restoration activities that will aid in the recovery of aquatic species and impaired water bodies.



Photos: (Top) Contractor installing beaver dam analogue structures along Camp Creek, summer 2016.

(Bottom) Fall, 2016. AmeriCorps crew helped weave willows between beaver dam analogue structures, then seal them with additional plant material. This process will help back up water, creating pools and overland flows that disperse water over the adjacent meadow floodplain.

For More Information See:

Aquatic Restoration Project Environmental Assessment and Decision Notice:

<http://www.fs.usda.gov/detail/malheur/landmanagement/projects/?cid=stelprd3817723>

The Aquatic Restoration Project facilitates the completion of projects across the Forest to benefit fish species listed as “threatened” under the Endangered Species Act, and to improve water quality.

The website above is designed to provide information about aquatic restoration activities on the Malheur National Forest. It will provide an annual list of projects planned, and a section about completed projects.

The list and description of projects to be implemented each fiscal year will be posted on this website as they become available, and at least 30 days prior to planned implementation.

Project implementation checklists will be used on each project to ensure all activities are consistent with the Malheur Forest Plan and project design criteria associated with the Aquatic Restoration Project decision.

Photos by Dan Armichardy, Forest Service, and:

Bouwes, Nicolaas et al. Ecosystem experiment reveals benefits of natural and simulated beaver dams to a threatened population of steelhead (*Oncorhynchus Mykiss*).” *Scientific Reports* 6 (2016): 28581. *PMC*. Web. 4 Jan. 2017.

Watch for future brochures that highlight more aquatic restoration activities.

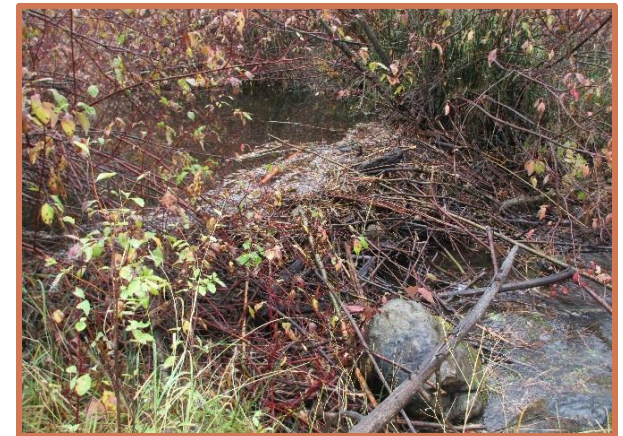
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Aquatic Restoration

Beaver Habitat Restoration on the Malheur National Forest



How beaver habitat restoration helps restore riparian communities, processes, and functions on our landscape



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for the greatest good